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REMARKS

The Examiner is thanked for the indication of allowable subject matter.

The Examiner has rejected Claims 1, 8, 10-14, 20, 21, 23-29 and 31 under 35 U.S.C. 103(a) as being unpatentable over Radatti (U.S. Patent Application No. 2002/0170052) in view of Corman et al. (Introduction to Algorithms, the MIT Press, 1986, Section 5.5, pp. 91-97 and Chapter 13, pp. 244-262). Applicant respectfully disagrees with such rejection.

With respect to each of the independent claims, the Examiner has relied on the following excerpts from Radatti to make a prior art showing of applicant's claimed "combining the list of virus signatures into a tree of virus signatures" and "wherein a portion of the branches corresponds to a plurality of the virus signatures" (see this or similar, but not identical, language in each of the foregoing claims).

"Further description on these fields is presented below. There may be one or more of these update_index files in various embodiments. For example, in certain embodiments, a number of software products may be present on the computer system and each product may have its own update_index file. Alternatively, in other embodiments, one update_index file may contain information on more than one software product. In yet other embodiments, the update_index may refer to other update_index files. This referential update_index file structure may provide a hierarchical tree structure and use a single update_index file to define an entire set of files for updates." [0034]

"Further description on these fields is presented below. There may be one or more of these update_index files in various embodiments. For example, in certain embodiments, a number of software products may be present on the server and each product may have its own update_index file. Alternatively, in other embodiments, one update_index file may contain information on more than one software product. In yet other embodiments, the server update_index will refer to other update_index files. This referential update_index file structure may provide a hierarchical tree structure and use one update_index file to define an entire set of files for updates." [0047]

Applicant respectfully asserts that providing a hierarchical tree structure of update index files does not meet applicant's claimed "list of virus signatures into a tree of virus

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signatures” or “portion of the branches corresponds to a plurality of the virus signatures.” An update index file, as in Radatti, is simply comprised of a module name, a file name, a version, a processing flag, a comment, and a hash (see [0025]).

While Radatti does mention updating in the context of antivirus software (see [0005]), the hierarchical tree structure disclosed in Radatti is implemented at a “macro”-level, namely with update index files which are each associated with one or more software products (as noted above). There is simply not even a suggestion of any sort of tree implemented with respect to the content of the update index files, let alone a tree implemented in the specific context of virus signature, as claimed above. In fact, Radatti *teaches away* from such claimed technique by virtue of the disclosure of update index files associated with one or more software products.

The Examiner has also stated that applicant’s claimed “tree [that] includes a plurality of branches each including a sequence of characters” would have been obvious in view of the nature of a tree. Again, applicant respectfully disagrees, since Radatti’s tree is comprised of entire update files and not a sequence of characters of virus signatures.

Further, the Examiner has relied on Corman’s teaching of search time advantages of binary search trees to meet applicant’s claimed technique “wherein the efficiency of the virus signature recognition is improved by reducing an amount of virus signature data that is compared against the data” (see this or similar, but not identical, language in each of the foregoing claims). Applicant respectfully asserts that although a binary search tree gives search time advantages, such teaching only relates to general binary trees, and not to allowing for a reduced amount of virus signature data that is compared against data for virus signature recognition.

Applicant also brings to the Examiner’s attention the following claim language not addressed by the Examiner: “wherein the branches include further sub-branches each corresponding to at least one virus signature” (see this or similar, but not identical,

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language in each of the foregoing claims). This and the aforementioned deficiencies noted in the Examiner's rejection are clearly rooted in the fact that only applicant teaches and claims the use of a tree of virus signatures, in the claimed manner, to improve virus scanning. Applicant respectfully requests a specific prior art showing of all of applicant's claim limitations, in combination with the remaining claim elements.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed.Cir.1991).

Applicant respectfully asserts that at least the third element of the *prima facie* case of obviousness has not been met, since the prior art references, when combined, fail to teach or suggest all of the claim limitations, as noted above. A notice of allowance or a specific prior art showing of all of applicant's claim limitations, in combination with the remaining claim elements, is respectfully requested.

The Examiner's rejections are also deficient with respect to the dependent claims. For example, with respect to dependent Claim 8 et al. and 29, it appears that the Examiner relies on Radatti's update_hash file ([0024]-[0033]) to make a prior art showing of applicant's claimed "wherein the characters of the tree of virus signatures are obfuscated to prevent detection by the comparison" and "wherein the obfuscation prevents accidental self-detection of the tree of virus." Applicant respectfully asserts that Radatti merely teaches hashing update files in the tree, but does not teach "virus signatures [that] are obfuscated to prevent detection by the comparison" let alone where such "obfuscation prevents accidental self-detection," as claimed by applicant.

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With respect to dependent Claim 12 et al., the Examiner has stated that applicant's claimed technique "wherein a virus signature is determined to be recognized upon the successful comparison of the data against an entirety of at least one branch that includes all of the characters of one of the virus signatures" is the nature of the tree walk of a search tree. Applicant respectfully asserts that such assertion does not take into full consideration applicant's specific claim language. The nature of a tree walk simply does not rise to the level of specificity of including a virus signature that is recognized in data upon a successful comparison of the data against an entirety of at least one branch (note claims).

With respect to dependent Claim 13 et al., and similar subject matter in independent Claim 28, the Examiner has simply dismissed applicant's claimed technique "wherein data is eligible to be declared clean upon the unsuccessful comparison of the data against an entirety of at least one branch that includes all of the characters of one of the virus signatures" as being in the nature of a search tree. Applicant respectfully asserts that it is not inherent in a tree that once an unsuccessful comparison is made of data against an entirety of at least one branch of a tree that includes at least one virus signature, the data is eligible to be declared clean. In addition, since Radatti also does not teach a tree of virus signatures wherein going down the tree of virus signatures determines whether a virus is in data, but instead only teaches a tree of update files for improved updating, applicant respectfully asserts that such claim language would also not be obvious.

Again, these and the aforementioned deficiencies noted in the Examiner's rejection are clearly rooted in the fact that only applicant teaches and claims the use of a tree of virus signatures, in the claimed manner, to improve virus scanning. A notice of allowance or a specific prior art showing of each of the foregoing limitations, in combination with the remaining claim elements, is respectfully requested.

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To this end, all of the pending independent claims are deemed allowable, along with any dependent claims depending therefrom.

Reconsideration is respectfully requested.

In the event a telephone conversation would expedite the prosecution of this application, the Examiner may reach the undersigned at (408) 505-5100. Applicants are enclosing a check to pay for the added claims. The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 50-1351 (Order No. NAI1P016).

Respectfully submitted,
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